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Publication date:
2013

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Citation (APA):

Jensen, M. S., Chriél, M., Al-Sabi, M. N. S., & Enemark, H. L. (2013). *Gastrointestinal parasites of the Common Eider (*Somateria mollissima*) – Seasonal, geographical and host related variations in the parasite burdens of two distinct Danish populations*. Abstract from 24th International Conference of the World Association for the Advancement of Veterinary Parasitology, Perth, Australia.

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Gastrointestinal parasites of the Common Eider (*Somateria mollissima*) – Seasonal, geographical and host related variations in the parasite burdens of two distinct Danish populations

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Abstract:

Due to a recent decline in number of Common Eiders (*Somateria mollissima*) in Denmark, prevalence, intensity and composition of the gastrointestinal helminth fauna of Common Eiders from two distinct colonies were examined to establish reference data of the helminth fauna of apparently healthy birds. Furthermore, seasonal, geographical and host related variations in helminth composition were studied. The birds were collected November 2010 to January 2012. Included were a total of 157 eiders from Jutland ($N=103$) and Zealand ($N=54$) respectively, comprising 54 males and 102 females of which 20 were gathered during the nesting period. The study is ongoing, and so far most parasites have only been identified to the family level. Eight trematode families, two nematode families, one acanthocephala and one cestode family were identified. Intensities of infections were primarily influenced by age of the birds. For the gizzard nematode *Amidostomum acutum*, significantly higher intensities ($p<0.05$) were seen in adults (max. intensity 245). For all other helminths, the intensity of infection was significantly higher in juveniles compared to adults. Prevalence and intensity of acanthocephala and *A. acutum* were significantly influenced by geography ($p=0.004$ & 0.03 respectively). Higher prevalence of acanthocephala was found in Jutland (83%) compared to 52% in Zealand; whereas *A. acutum* was more prevalent in Zealand (88%) compared Jutland (66%). Significant seasonal variations in intensities were observed for acanthocephala, *A. acutum* and cestodes. *A. acutum* intensity was highest in spring (max. intensity 245), whereas acanthocephala and cestode intensities were higher during fall (max. intensities: 1153 & 10480 respectively). While acanthocephala and cestodes were almost absent in nesting females, infections with *A. acutum* remained high during the incubation period, and most notably, a significant ($p<0.001$) increase in both intensity and prevalence (100%) of trematodes of the family Notocotylidae was observed in nesting females. Ongoing analyses will determine correlation between parasite burden and body condition.

Acknowledgements:

DANMARKS JÆGERFORBUND is thanked for supplying birds for the study, and Cynthia D Juel and Leif B Eiersted are acknowledged for skilled technical assistance. The study was financed by the Danish Nature Agency (SNS-304-00001), Aarhus University (51-00084) and the Technical University of Denmark (55013-0014).